

ARIZONA DEPARTMENT OF TRANSPORTATION
ROADWAY ENGINEERING GROUP
OFFICE MEMO

December 9, 1999

TO: Roadway Design Personnel
ADOT and Consultants

FROM: Terry H. Otterness
Design Program Manager
Roadway Design Section

RE: **SRT 350 Guard Rail End Terminal
Revision from 9 Post to 8 Post System**

The manufacturer of the SRT 350, SYRO, Inc., has received approval through the PRIDE program for a revision to the previously approved SRT 350. The primary change to the system is a change from the previously approved 9 post system to an 8 post system with a change in allowable offset that varies from 3' to 4'. The new system, to be utilized on new projects, has been crash tested to meet NCHRP 350 Test Level 3 and will provide a more economical system.

Tom Scheck is sending out copies of the new Manufacturer's Approved Drawings to the Districts. Questions regarding the drawings may be addressed to Tom at 602-712-8674 or SYRO.

A description of the hardware and installation revisions is included in the attached July 6, 1999 letter from SYRO to Al Zubi.

A plan layout Detail for the 8 Post System is attached which can be included in the plans when utilizing the SRT 350 as an alternate. Electronic files are available through the Roadway Design web site. Designers should note that the detail shows the layout using the 3' offset as the normal application but that the 3.5' and the 4' offset may be utilized on a project whenever desired. Designers should coordinate with District, observe field conditions, and consider whether Type A (edge of shoulder) or Type B (2' offset) guardrail is specified when selecting the SRT offset. Offsets other than the 3' alternate must be specified on the plans.

Please implement this Detail on all current design projects and support desired changes on construction projects.

Also, please distribute this memo and attachments to design personnel, project managers, and other affected personnel within your respective groups.

Please call Tom Scheck, Jeri Pulkinen, or me at 602-712-7341 for any questions regarding this material.
c.

Roadway Engineering Group
Traffic Group
Statewide Project Management Group
Construction Group
Central Maintenance
Bridge Group
Materials Group
Valley Freeway Group

Engineering Consultant Services
Contracts and Specifications Section
Al Zubi
Districts (10)
FHWA
Engineering Consultant Services
Regional Traffic Engineers
Local Government Section

Attachments

Web Site for Detail is: http://www.dot.state.az.us/Roads/Rdwyeng/Look_inside.htm



SYRO, INC.

A SUBSIDIARY OF TRINITY INDUSTRIES, INC.

July 6, 1999

Mr. Al Zubi
Arizona Transportation Research Center
Arizona Department of Transportation
1130 N. 22nd Avenue
Phoenix, AZ 85009

Dear Al:

SYRO, Inc. has completed tests on revisions to the SRT-350, and these revisions are submitted for your approval for use on future ADOT projects. The major change to the system was to change from a 9 post system to a 8 post system and change the 1.22 meter (4'-0") offset to a variable offset of 0.91 meters (3'-0") to 1.22 meters (4'-0").

This reduced post spacing will make all of the post spacing after post 3 to post 9 to be 1.27 meters (4'-2"). This change took place in the second rail panel. The slots in the second rail panel were placed in a position that they will accommodate either the 8 post system or the 9 post system. This rail panel will become the standard for both of the systems in the future.

The 8 post system will eliminate the need for the backup plates. The backup plates were used to hold the rail up where there was no bolt going through the rail element. For the 8 post system, bolts will now be used for a rail element post connection at posts 1, 2, 3, 4, 5, & 6. The new rail element will have holes punched in it to allow for the connecting of the rail panel to the posts at the 1270 mm (4'-2") post spacing. The third rail panel will be bolted to posts 6 and 9. There will be no rail to post connection at posts 7 and 8.

Another change will be that posts one and two (tube posts) will have a 19-mm (3/4 inch) wide, 0.38-mm thick steel strap installed just below the rail bolt hole. This post can be used on the 8 or the 9 post system, but must be used on the 8 post system. This band will be installed on the post at the factory.

An earlier version of the 8 post system (0.91 meter offset) revised the slot guards and the terminal piece. The new slot guards were formed from single piece of metal instead of welded up from several pieces. Only six (6) bolts were required to bolt it to the rail panel. The new rail panel will have the eight (8) bolt holes in it to accommodate either the old or the new slot guard. The terminal piece was changed

from a full wrap to a three-quarter wrap.

This system was tested tying it into both the wood or steel line posts for W-Beam guardrail.

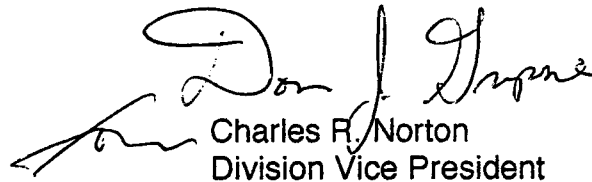
The following information is submitted to assist in your review process:

1. FHWA approval letter dated June 18, 1998.
2. FHWA approval letter dated June 4, 1999.
3. A test report titled "Optimization of the W-Beam Slotted Rail Terminal" dated May 1998.
4. A test report titled "Improved W-Beam Slotted Rail Terminal With 1.22-M End Offset" dated December 1998.
5. A test report titled "Improved W-Beam Slotted Rail Terminal With 1.22-M End Offset and Steel Line Posts" dated April, 1999.
6. Drawing SS 444 dated 5/12/99 for the "Slotted Rail Terminal Post Layout and Erection Details, SRT-350 (12.5, 8 Post)".

No metric drawings are available at this time. They will be submitted to you when they become available

If you have any question pertaining to this information, please give me a call.

Sincerely,



Charles R. Norton
Division Vice President

Enclosures: